

ZF SYSTEMCARD™

*Network-ready
embedded systems computer
based on the OEMmodule*



*100MHz 486SX or 40MHz
386SX motherboard in 5.25" hard
disk footprint*

10Base-T Ethernet

*SVGA display controller
supporting flat panel displays*

CompactFlash socket

*One (486SX) or two (386SX)
JEDEC byte-wide solid-state disk
sockets*

*SO-DIMM memory expansion
socket (386SX)*

Floppy disk and IDE controllers

*Three RS232C and
one RS485 serial ports*

Two parallel ports

12 lines of digital I/O

Rapid integration:

Proven PC compatibility

Standard motherboard feature set

Expert technical support

The ZF SystemCard is a network-ready, full-function 386/486 single board computer in a 5.25" form factor. We've combined our award-winning OEMmodule™ Single Component Computer with a 10Base-T Ethernet and VGA controller to create a compact single board computer designed for network applications. The form factor of the SystemCard matches the footprint of a standard 5.25" hard disk, ideally sized for integration into a wide range of applications.

Complete Feature Set

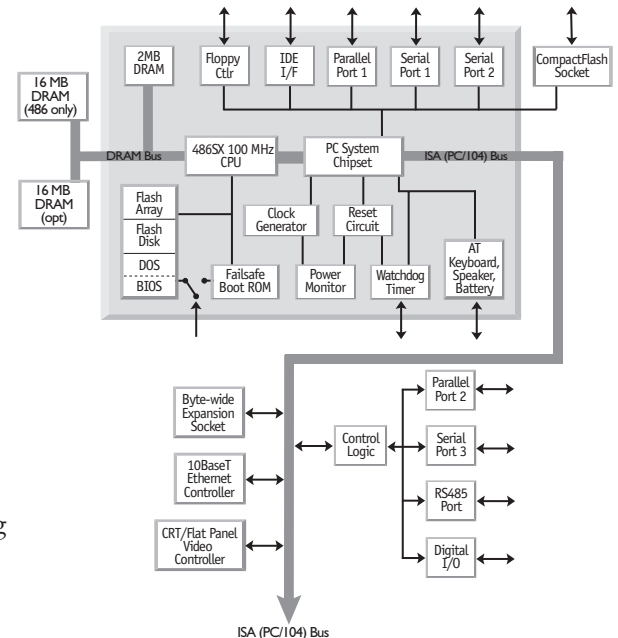
The ZF SystemCard contains all standard PC/AT motherboard functionality including serial and parallel I/O, digital I/O, floppy and IDE disk controllers, an SVGA display controller for flat panel support, user-available internal flash, CompactFlash socket, external JEDEC byte-wide socket, PC/104 expansion buses, AT-compatible BIOS, Caldera DR-DOS™ (pre-loaded), and General Software's Embedded DOS-ROM™ (386SX).

Quicker design cycle, shorter time-to-market

Easily integrate the widest selection of low-cost hardware peripherals by attaching PC/104 expansion modules directly to the board via the PC/104 expansion bus. The PC/AT ROM-BIOS and DOS enable you to develop software on your desktop PC/AT then easily transfer your development work to the embedded system with little or no modification. Or you can develop your application software directly on the ZF SystemCard.

Based on the OEMmodule Single Component Computer

The OEMmodule SCC combines the system hardware, software and solid state mass storage in a single compact device the size of a large integrated circuit. This unique 2.2 inch by 3 inch chip-like design makes the OEMmodule SCC ideal for applications that require low power consumption, high reliability and a small overall product size.



We Make Computing Invisible

SPECIFICATIONS

ZF SystemCard™ Features

CPU: 486SX-100MHz/386SX-40MHz

- Full 32-bit internal architecture.
- Cost-effective 16-bit external bus.
- Virtual memory, paging and hardware enforced protection.
- Physical memory space up to 32 MB.

DRAM Controller Supports

- High-performance MUXed DRAM interleave, CPU pipelined operation.
- 2MB DRAM in the OEMmodule
- 16MB additional DRAM soldered on board (486SX).
- Supports up to 16MB additional DRAM soldered on (486SX) or in SO-DIMM memory expansion socket (386SX).
- Shadow RAM.
- Multiple context EMS support.

PC Core Logic with PC/AT Compatibility

- DMA controllers.
- Interrupt controllers.
- Timer/counters.
- AT keyboard controller.
- Realtime clock.

ISA Bus

- Compliant with standard PC/AT expansion bus with an IRQ and DMA channel subset.
- Supports PC/104 implementation.

Fail-safe Boot ROM™

- Embedded ROM.
- Boot to a pre-determined, factory defined state regardless of the internal BIOS flash memory's condition.
- Full flash memory restores functionality via the serial port.
- Recover easily from the corruption or loss of CPU boot data.

Ethernet Controller

- 10BaseT (twisted-pair), 10M bits/s.
- IEEE 802.3 and Ethernet standards.
- LNKST and RCV LED verification.
- Network Boot PROM capability.
- Supports Microsoft's Plug and Play System configuration.
- NOS support, including Novell Netware, Microsoft Windows 95 and LAN Manager, SCO UnixWare, IBM LAN Server, Sun-Soft PC NFS and Solaris, Artisoft LANtastic, Banyan Vines.

Digital I/O

- 12 bits of TTL input or output.

Serial Ports

- Two 16550-compatible serial ports and two 16450-compatible serial ports (386SX) or four 16550-compatible serial ports (486SX).

Parallel Port

- Two fully-compatible PC/AT parallel printer ports, plus bi-directional operation (EPP).

CRT/Flat-Panel Controller

- Chips And Technologies 65545 Flat Panel/CRT GUI accelerator.
- Fully compatible with VGA standard.
- Hardware windows acceleration.
- 512K byte video memory.
- Supports non-interlaced CRT monitors with resolutions up to 1024 x 768 x 16 colors and 800 x 600 x 256 colors.
- True-color and Hi-color capability with flat panels and CRT monitors up to 640 x 480.
- Direct interface to color and monochrome Dual Drive (DD) and Single Drive (SS) STN and TFT panels.
- Supports 8 to 24-bit data interfaces.
- Power-sequencing controls for Vdd, Vee, and +12V to inverters.
- Flat-Panel (3.3V and 5.0V) option.

Floppy Disk Controller

- Software compatible with 765B controller.
- Integrated digital data separator capable of data transfer rates up to 2Mbps.
- Requires no external components.

IDE Hard Drive Interface

- Full 40-pin interface to standard IDE hard disk drive.
- Up to two IDE drives (master/slave).
- Supports CompactFlash™.

Solid State Flash Memory Devices

- 2MB (486SX) or 512KB (386SX) Internal Flash Memory.
- 1.4MB (486SX) or 180KB (386SX) Resident Flash Disk available for DOS and OEM software use, usually the boot drive.
- One (486SX) or two (386SX) 32-pin sockets for JEDEC byte-wide memory Flash EPROM or NVRAM
- Expandable by adding 2MB to 60MB of CompactFlash.

Watchdog Timer

- Programmable tickle sources.
- Automatic reset or NMI (jumper selectable) if user application goes out of control.

Power Monitor

- Brownout protection - settable voltage threshold. Reliable reset signal if power fluctuates.

PC BIOS

- Preloaded, highly customized version of General Software's Embedded BIOS.
- Standard AT BIOS functionality.
- Supports OEM add-ons and customization.
- **SETUP** information stored in non-volatile flash EPROM allows battery-free operation.

Embedded DOS (386 only)

- Caldera DR-DOS core preloaded and customized for OEMmodule.
- General Software Embedded DOS-ROM available free of charge.
- Support for standard DOS software.

Electrical Specifications

- 5 volt only $\pm 5\%$ operation
- Requires 5VDC @ 1.3 A

Mechanical/Environmental

- **Size:** 5.7" x 8.0" (145 mm x 202 mm).
- 5.25" hard disk footprint.
- PC/104 bus header.
- Standard ribbon cable connectors.
- Optional flat panel display support.
- **Operating temperature:** 32°F to 158°F (0°C to 70°C) Extended temperature range available. Contact factory for additional information.
- **Storage temperature:** -67°F to 212°F (-55°C to 100°C).
- **Relative humidity:** 5% to 95% non-condensing.
- **Weight:** 9.9 oz (281 gm).

Ordering Information

SCX-486-Q-01/SCX-386-Q-01

ZF SystemCard - 5.25" form factor with OEMmodule w/18MB DRAM (486SX) or 2MB DRAM (386SX), built-in flash, 10BaseT Ethernet, SVGA controller, speaker, BIOS and DOS ROM. Does not include external DRAM or flash, technical manuals, cables, or utility software.

SCX-486-K-01/SCX-386-K-01

ZF SystemCard Development Kit - 5.25" form factor with OEMmodule w/ 18MB DRAM, built-in flash, 10BaseT Ethernet, SVGA controller, speaker, BIOS and DOS ROM, technical manuals, cables, and utility software. Does not include external DRAM or flash.



ZF Embedded, Inc.

Corporate Offices

1052 Elwell Court
Palo Alto, CA 94303
USA

Tel: +1-650-965-3800

Fax: +1-650-965-4050

1 (800) 683-5943

Email: info@zfimicro.com

<http://www.zfimicro.com>

European Offices

30, rue du Morvan, Silic 558
94643, Rungis Cédex
France

Tel : +33-(0)1-41-80-04-10

Fax : +33-(0)1-41-80-04-11